CLAIMS

1. A motor drive apparatus comprising:

estimation means (89, 91) estimating an amount of demagnetization of a permanent magnet motor (60) based on a voltage control amount of the q axis applied in a case where said permanent magnet motor (60) is controlled using a d-q axis transformation; and

operation handling means (91) limiting operation of said permanent magnet motor (60) when said estimated amount of demagnetization is larger than a predetermined value.

2. The motor drive apparatus according to claim 1, further comprising a converter (20) changing an input voltage necessary for driving said permanent magnet motor (6), wherein

said estimation means (89, 91) corrects said estimated amount of demagnetization according to the level of said input voltage.

3. The motor drive apparatus according to claim 1, wherein

said estimation means (89, 91) estimates said amount of demagnetization by comparing the voltage control amount of the q axis to be controlled with a reference value.

4. The motor drive apparatus according to claim 3, wherein

said estimation means (89, 91) holds, in the form of a map (MAP), the reference values correlated with at least two revolution numbers to extract said reference value from said map (MAP) and estimate said amount of demagnetization.

5. The motor drive apparatus according to claim 1, wherein

said estimation means (89, 91) estimates said amount of demagnetization based on a difference between a reference value and the voltage control amount of the q axis to be controlled.

6. The motor drive apparatus according to claim 5, wherein

said estimation means (89, 91) holds, in the form of a map (MAP), the reference values correlated with at least two revolution numbers to extract said reference value from said map (MAP) and estimate said amount of demagnetization.

7. The motor drive apparatus according to any of claims 3-6, wherein

said reference value is said voltage control amount of the q axis when no demagnetization of said permanent magnet motor (60) occurs.